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ABSTRACT

The purpose of this study was to investigate the relationship between the scores students earned on multiple choice tests and the number of minutes students required to complete the tests. The 5 tests were made up of 20 randomly drawn questions from a large pool of questions about research methods. Students were allowed an unlimited amount of time to complete the tests, although no student required more than 1 hour for any of the five administrations of the test. Two graduate research classes were involved in the study, and the pooled group sizes for which there were complete data ranged from 32 to 42. Pearson correlations for the five administrations of the test ranged from 0.06 to 0.30, all suggesting little relationship. It was concluded that student performance does not depend on the amount of time spent on the test. Providing unlimited amounts of time for testing is probably not necessary as long as reasonable time is available. (Contains one table and seven references.) (Author/SLD)

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A Study of the Relationship Between Scores and Time on Tests

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Abstract

The purpose of this study was to investigate the relationship between the scores students earned on multiple choice tests with the number of minutes the students required to complete the tests. The tests were each made up of twenty randomly drawn questions from a large pool of questions about research methods. The amount of time allowed the students to complete the tests was unlimited, although no student required more than one hour for any one of the five administrations of the test. Two graduate research classes were involved in the study and their pooled group sizes for which there was complete data ranged from 32 to 42. Pearson correlations for the five administrations of the test ranged from 0.06 to 0.30, all suggesting little relationship. It was concluded that students who complete tests quickly do not necessarily do well or poorly, nor do students who take more extensive amounts of time.

A Study of the Relationship Between Scores

and Time on Tests

Being the first person to finish a test has always appealed to some students. Whether it is competitive spirit, the ability to leave class early, or maybe to impress friends, there are always several students who will push themselves to be among the first to complete examinations. On the other hand, there are always a few students who tend to take whatever time is provided to complete tests. In the interest of insuring that an adequate amount of time is provided for students, it seems reasonable to question whether there is any relationship between the performance of students on tests and the amount of time required to complete the exams. In other words, do students really improve their scores when they are allowed extra time to complete examinations? The purpose of this study, then, was to investigate the relationship between the scores students earned on multiple choice tests with the number of minutes the students required to complete the tests.

Several researchers have investigated performance and different aspects of testing, including the order of items, the location on the test of the response space, the handedness of the examinees, the sex of the examinees, and whether they belong to culturally-defined groups (Araujo & Semb, 1979; Donlon, 1977; Kleinke, 1979, 1980; Reilly & Evans, 1974). It was the observation of this researcher, however, that time may have some relationship with performance. In fact, it seemed logical that students who are well prepared would tend to be able to answer questions relatively quickly. In such a case, there may be no inherent advantage to allowing students extensive amounts of time to complete their tests.

Bridges (1982, 1985) did investigate order of finish and time required on tests. In his review of the literature, several studies were cited in which some significant curvilinear

relationships had been found, but no linear relationships. He noted a growing interest in the relationship between achievement test performance and order of finish as well as the time required, but observed that all of these studies were based on single administrations of examinations. To extend the range of interest from a single test to a course-based series he examined data generated from three multiple-choice examinations given during five sections of introductory psychology offered by The Pennsylvania State University. Little evidence was found to support either linear or nonlinear relationships between performance and order of finish or time required.

All of the samples discussed thus far have included only one or three administrations of tests. In addition, all of the studies located discussed findings at least a decade old. In the current study there were five administrations of tests during two introductory graduate courses in research methods. The tests were each made up of twenty randomly drawn questions from a large pool of questions about research methods. The amount of time allowed the students to complete the tests was unlimited, although no student required more than one hour for any one of the five administrations of the test. The graduate research classes involved in the study had pooled group sizes ranging from 32 to 42.

Tests were administered at the end of each week during five-week summer sessions of the first summer term of 1994. Students were allowed whatever time they desired to make their selections for the twenty items. When their tests were turned in, the time was noted and recorded on the test. When the tests were graded, the scores were the total number of questions answered correctly, with no weighting.

To determine the linear relationships between the amount of time taken and the total score for each test, Pearson correlations were computed for the five administrations of the test.

Lilliefors tests for bivariate normality and inspection of the plots suggested sufficient normality to calculate Pearson correlations. The correlations ranged from 0.06 to 0.30, all suggesting little linear relationship. Inspection of the scatterplot indicated no marked nonlinear pattern.

Table 1

Pearson r's Between Time Required and Test Score

Test Number	n	r
1	39	0.30
2	42	0.06
3	40	0.19
4	37	0.26
5	32	0.28

Given that no evidence existed to support either linear or nonlinear relationships it appears that, at least for the students involved in the study, that those who complete tests quickly do not necessarily do well or poorly, nor do students who take more extensive amounts of time. Providing unlimited amounts of time for testing is probably unnecessary as long as a reasonable amount is available.

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